

CLAIMS

What is claimed is:

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1. A ballistic barrier for protecting objects in an interior of a vehicle from damage due to projectile penetration, the vehicle having an ¹²outer shell defining the interior, the barrier comprising:
at least one layer of ⁴⁶high strength fabric disposed in the interior of the vehicle and positioned towards the outer shell of the vehicle; and
the high strength fabric being substantially fixedly positioned with respect to the outer shell of the vehicle.
2. A ballistic barrier as recited in claim 1 wherein the at least one layer of high strength fabric comprises a plurality of plies.
3. A ballistic barrier as recited in claim 2 wherein one of the plies is a felt.
4. A ballistic barrier as recited in claim 2 wherein at least one of the plies is comprised of woven fibers.
- NE
5. A ballistic barrier as recited in claim 1 wherein the fabric is comprised of woven fibers.
6. A ballistic barrier as recited in claim 1 wherein the at least one layer of high strength fabric comprises a polymer material.
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7. A ballistic barrier as recited in claim 1 wherein the at least one layer of high strength fabric comprises aramid material.

8. A ballistic barrier as recited in claim 1 wherein the at least one layer of high strength fabric comprises polyethylene material.

9. A ballistic barrier as recited in claim 1 wherein the at least one layer of high strength fabric comprises polybenzoxazole material.

10. A ballistic barrier as recited in claim 1 wherein the vehicle includes an inner panel, and wherein the layer of high strength fabric is positioned between the outer shell and inner panel of the vehicle.

11. A ballistic barrier as recited in claim 1 wherein the vehicle is primarily designed for military applications.

12. A ballistic barrier as recited in claim 1 wherein the vehicle is primarily designed for transporting at least one of cargo and passengers.

13. A ballistic barrier as recited in claim 12 wherein the vehicle is a limousine.

14. A ballistic barrier as recited in claim 1 wherein the vehicle is an aircraft.

15. A ballistic barrier as recited in claim 1 further including a second layer of high strength fabric wrapped around at least one component positioned in the interior of the vehicle.

16. A ballistic barrier as recited in claim 1 wherein the layer of high strength fabric is fixedly positioned with respect to the outer shell of the vehicle.

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17. A ballistic barrier for protecting objects in a structure from damage due to projectile penetration, the structure having an outer housing, the barrier comprising:

at least one layer of high strength fabric positioned towards the outer housing of the structure; and

the high strength fabric being substantially fixedly positioned with respect to the structure.

18. A ballistic barrier as recited in claim 17 wherein the at least one layer of high strength fabric comprises a ⁴⁶plurality of plies.

19. A ballistic barrier as recited in claim 18 wherein one of the plies is a felt.

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20. A ballistic barrier as recited in claim 18 wherein at least one of the plies is comprised of woven fibers.

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21. A ballistic barrier as recited in claim 17 wherein the fabric is comprised of woven fibers.

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22. A ballistic barrier as recited in claim 17 wherein the at least one layer of high strength fabric comprises a polymer material.

23. A ballistic barrier as recited in claim 17 wherein the at least one layer of high strength fabric comprises aramid material.

24. A ballistic barrier as recited in claim 17 wherein the at least one layer of high strength fabric comprises polyethylene material.

25. A ballistic barrier as recited in claim 17 wherein the at least one layer of high strength fabric comprises polybenzoxazole material.

26. A ballistic barrier as recited in claim 17 wherein at least one layer of high strength fabric is positioned towards an inner surface of the outer housing of the structure.

27. A ballistic barrier as recited in claim 17 wherein at least one layer of high strength fabric is positioned towards an outer surface of the outer housing of the structure.

28. A ballistic barrier for protecting a wearer of the ballistic barrier from damage due to projectile penetration, the ballistic barrier comprising:
first and second portions positioned generally parallel each other;
the first portion including at least one layer of high strength fabric; and
the second portion being constructed of a generally hard, impact-resistant material.

29. A ballistic barrier as recited in claim 28, wherein the at least one layer of high strength fabric comprises a plurality of plies.

30. A ballistic barrier as recited in claim 29 wherein one of the plies is a felt.

31. A ballistic barrier as recited in claim 29 wherein at least one of the plies is comprised of woven fibers.

32. A ballistic barrier as recited in claim 28 wherein the fabric is comprised of woven fibers.

33. A ballistic barrier as recited in claim 28 wherein the at least one layer of high strength fabric comprises a polymer material.

34. A ballistic barrier as recited in claim 28 wherein the at least one layer of high strength fabric comprises aramid material.

35. A ballistic barrier as recited in claim 28 wherein the at least one layer of high strength fabric comprises polyethylene material.

36. A ballistic barrier as recited in claim 28 wherein the at least one layer of high strength fabric comprises polybenzoxazole material.

37. A ballistic barrier as recited in claim 28 wherein the first portion is positioned between the wearer of the ballistic barrier and the second portion.

38. A method for protecting objects in an interior of a vehicle from damage due to projectile penetration, the vehicle having ¹²an outer shell defining the interior, the method comprising:

⁴⁶positioning at least one layer of high strength fabric in the interior of the vehicle towards the outer shell of the vehicle; and

attaching the high strength fabric to the vehicle such that the high strength fabric is substantially fixedly positioned with respect to the outer shell of the vehicle.

39. A method as recited in claim 38 wherein the vehicle includes ¹⁴an inner panel, and wherein the layer of high strength fabric is positioned between the outer shell and inner panel of the vehicle.

40. A method as recited in claim 38 wherein the vehicle is primarily designed for military applications.

41. A method as recited in claim 38 wherein the vehicle is primarily designed for transporting at least one of cargo and passengers.

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42. A method as recited in claim 41 wherein the vehicle is a limousine.

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43. A method as recited in claim 38 further comprising wrapping a second layer of high strength fabric around at least one component positioned in the interior of the vehicle.

44. A method for protecting objects in a structure from damage due to projectile penetration, the structure having an ¹⁰outer housing, the method comprising:
⁴⁴positioning at least one layer of high strength fabric towards the outer housing of the structure; and
attaching the high strength fabric to the structure such that the high strength fabric is substantially fixedly positioned with respect to the structure.

45. A method as recited in claim 44 wherein the at least one layer of high strength fabric comprises a ⁴⁴plurality of plies.

46. A method as recited in claim 45 wherein one of the plies is a ⁴²felt.

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47. A method as recited in claim 45 wherein at least one of the plies is comprised of woven fibers.

48. A method as recited in claim 44 wherein the at least one layer of high strength fabric comprises aramid material.

49. A method as recited in claim 44 wherein the at least one layer of high strength fabric comprises polyethylene material.

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49. A method as recited in claim 44 wherein the at least one layer of high strength fabric comprises polybenzoxazole material.

50. A method as recited in claim 44 further comprising positioning at least one layer of high strength fabric towards an inner surface of the outer housing of the structure.

51. A method as recited in claim 44 further comprising positioning at least one layer of high strength fabric towards an outer surface of the outer housing of the structure.

52. A fire barrier for protecting objects in an interior of a vehicle from damage due to fire, the vehicle having an outer shell defining the interior, the barrier comprising:

at least one layer of fire resistant fabric disposed in the interior of the vehicle and positioned towards the outer shell of the vehicle; and

the fire resistant fabric being substantially fixedly positioned with respect to the outer shell of the vehicle.

53. A fire barrier as recited in claim 52 wherein the at least one layer of fire resistant fabric comprises a plurality of plies.

54. A fire barrier as recited in claim 52 wherein the at least one layer of fire resistant fabric comprises a polymer material.

55. A fire barrier as recited in claim 52 wherein the at least one layer of fire resistant fabric comprises aramid material.

56. A fire barrier as recited in claim 52 wherein the at least one layer of fire resistant fabric comprises polybenzoxazole material.

57. A fire barrier as recited in claim 52 wherein the vehicle includes an inner panel, and wherein the layer of fire resistant fabric is positioned between the outer shell and inner panel of the vehicle.

58. A fire barrier as recited in claim 52 wherein the vehicle is primarily designed for military applications.

59. A fire barrier as recited in claim 52 wherein the vehicle is primarily designed for transporting at least one of cargo and passengers.

60. A fire barrier as recited in claim 52 wherein the vehicle is an aircraft.

61. A fire barrier as recited in claim 52 further including a layer of high strength projectile resistant fabric positioned in the interior of the vehicle for protecting objects in an interior of a vehicle from damage due to projectile penetration.

62. A fire barrier as recited in claim 52 wherein the layer of fire resistant fabric is fixedly positioned with respect to the outer shell of the vehicle.

63. A fire barrier for protecting objects in a structure from damage due to fire, the structure having an outer shell defining the interior, the barrier comprising:
at least one layer of fire resistant fabric disposed in the interior of the structure and positioned towards the outer shell of the structure; and
the fire resistant fabric being substantially fixedly positioned with respect to the outer shell of the structure.

64. A fire barrier as recited in claim 63 wherein the at least one layer of fire resistant fabric comprises aramid material.

65. A fire barrier as recited in claim 63 wherein the at least one layer of fire resistant fabric comprises polybenzoxazole material.

66. A fire barrier as recited in claim 63 further including a layer of high strength projectile resistant fabric positioned in the interior of the structure for protecting objects in an interior of a structure from damage due to projectile penetration.

67. A fire barrier as recited in claim 63 wherein the layer of fire resistant fabric is fixedly positioned with respect to the outer shell of the structure.

68. A ballistic and fire barrier for protecting objects in an interior of a vehicle from damage due to projectile penetration and fire, the vehicle having an outer shell defining the interior, the barrier comprising:

at least one layer of high strength fabric disposed in the interior of the vehicle and positioned towards the outer shell of the vehicle;

at least one layer of fire resistant fabric disposed in the interior of the vehicle and positioned towards the outer shell of the vehicle;

the high strength fabric being substantially fixedly positioned with respect to the outer shell of the vehicle; and

the fire resistant fabric being substantially fixedly positioned with respect to the outer shell of the vehicle.

69. A method for protecting objects in an interior of a vehicle from damage and injury due to fire, the vehicle having an outer shell defining the interior, the method comprising:

positioning at least one layer of fire resistant fabric in the interior of the vehicle towards the outer shell of the vehicle; and

attaching the fire resistant fabric to the vehicle such that the fire resistant fabric is substantially fixedly positioned with respect to the outer shell of the vehicle.

70. A method as recited in claim 69 wherein the vehicle includes an inner panel, and wherein the layer of fire resistant fabric is positioned between the outer shell and inner panel of the vehicle.

71. A method as recited in claim 69 wherein the vehicle is primarily designed for military applications.

72. A method as recited in claim 69 wherein the vehicle is primarily designed for transporting at least one of cargo and passengers.

73. A method as recited in claim 69 wherein the vehicle is an aircraft.

74. A method as recited in claim 69 further comprising wrapping a second layer of fire resistant fabric around at least one component positioned in the interior of the vehicle.

75. A method as recited in claim 69 further comprising positioning at least one layer of high strength fabric in the interior of the vehicle for protecting objects in the interior of the vehicle from damage due to projectile penetration.

76. A method as recited in claim 69 wherein the at least one layer of fire resistant fabric comprises a felt.

77. A fire barrier as recited in claim 52 wherein the at least one layer of fire resistant fabric comprises a fire resistant felt.

78. A fire barrier as recited in claim 63 wherein the at least one layer of fire resistant fabric comprises a fire resistant felt.

79. ⁶⁸ A ballistic and fire barrier for protecting objects in an interior of a structure from damage and injury due to projectile penetration and fire, the structure having an outer shell defining the interior, the barrier comprising:

at least one layer of high strength fabric disposed in the interior of the structure and positioned towards the outer shell of the structure;

at least one layer of fire resistant fabric disposed in the interior of the structure and positioned towards the outer shell of the structure;

the high strength fabric being substantially fixedly positioned with respect to the outer shell of the structure; and

the fire resistant fabric being substantially fixedly positioned with respect to the outer shell of the structure.

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